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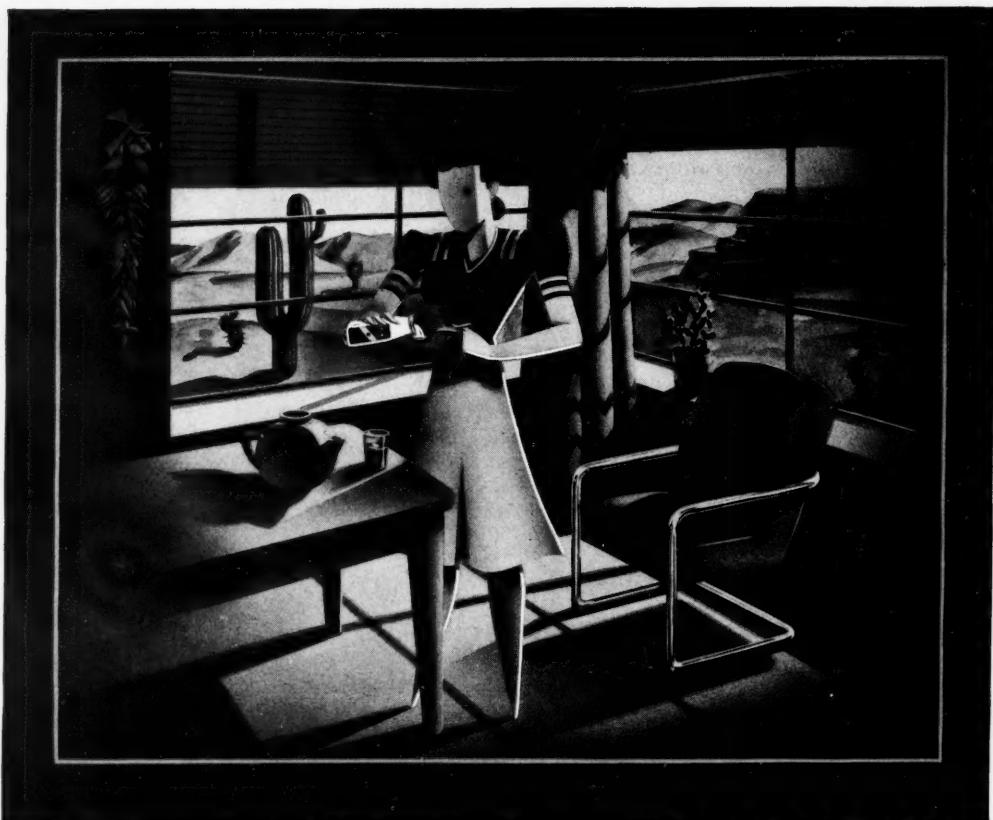
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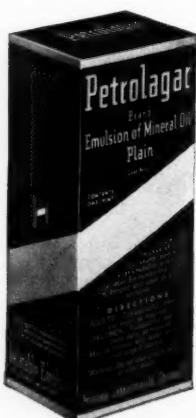
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OBSTRUCTED LABOR

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Definition—Labor is spoken of as being obstructed when progress of the head through the pelvis has come to a standstill and when further progress by means of the natural forces seems impossible, or better perhaps, improbable.

Obviously there will be some disagreement as to what constitutes absolute obstruction, for, with time and moulding and adaptation of the fetal presenting part, a favorable outcome will sometimes occur in spite of marked pelvic abnormality or cephalopelvic disproportion. Only long and extended experience can teach one to judge whether further progress without interference can be expected, and thus point out proper indications for interference. It is not always necessary to have long experience in hospital work to be able to diagnose obstructed labor. Any man who delivers a sufficient number of patients can attain a good working knowledge along this line, if he will study his cases carefully. Anyone who will observe normal labor, make sufficient aseptic vaginal examinations during labor so that he can distinguish the bones of the fetal head, find and recognize the fontanelles and suture lines by palpation, and then observe how the position of these landmarks changes as the head moves through the pelvis, will know the normal mechanism and be able to recognize the abnormal. This is the first step in his education and is the all essential one.

Now when the abnormal or unusual mechanism occurs he will find that his landmarks vary; the anterior fontanelle may descend on a level with or below the posterior, indicating that the head is poorly flexed. Early discovery of this fact will put him on his guard as signifying some abnormal factor. The posterior fontanelle may be in the posterior pelvis or pointing toward the side wall, i.e. transverse position, or the sagittal suture may be lying transversely across the pelvis instead of obliquely, with one or the other parietal bones presenting instead of the occipital bone—indicating

that the baby's head is not entering the pelvis directly but that there is lateral flexion, so-called asynclitism. This condition usually indicates a flat or android type of pelvis.

The mechanism of labor observed in the occiput posterior position must obviously be a different one from that in the anterior positions. It is more difficult because the occiput must rotate anteriorly to be born, if the favorable sub-occipito-bregmatic diameter of the baby's head and not the long occipito-mental diameter is to engage at the introitus. One should follow the process of this rotation in cases which deliver spontaneously, try to observe at what level the rotation occurs, how long it takes to rotate, where the head is longest delayed, and what causes the delay. One finds that the head does not always rotate at the same level; in some cases it rotates above the ischial spines, in others it must come far down to the outlet so that the perineum is on the stretch and the caput is crowning before rotation will occur. In still other cases the occiput rotates to the hollow of the sacrum and cannot descend further because of protruding ischial spines. One must learn to recognize this condition, for all that is required is to push the head up a little, rotate either manually or by forceps and deliver easily as an anterior position. Yet again the occiput may remain posterior and because of transverse contraction of the pelvis, as in the anthropoid type, deliver as a persistent posterior, rotation at any level being impossible.

The mechanism of the transverse engagement and descent of the head seen so often in the android or male type of pelvis or in the flat pelvis has been observed and written about for many years. Here the available conjugate diameter is shortened so that the longest pelvic diameter is the transverse. If the conjugate diameter is borderline the smallest diameter of the fetal head, i.e. the bitemporal, will attempt to engage it, thus forcing the longer biaxial diameter off to the side. The occiput thus

comes against the side of the pelvis and is held up resulting in deflexion and allowing the sinciput to sink into the opposite side. Progress is slow. Gradually, if arrest does not occur, the head sinks into the pelvis, the occiput coming down only after the sinciput has reached the pelvic floor. Here in cases which resolve spontaneously the occiput finally descends until low enough to rotate and escape under the pubic ramus and be born. This is one of the common difficult mechanisms and should be carefully studied by the one who would attempt forceps interference. Likewise in the deflexion attitudes of the head one should study the mechanism by examinations throughout labor, know the normal course of progress. The mechanism of face presentation which resolves without interference is one of extreme extension, the occiput lying back on the cervical vertebrae, the chin far forward. After long labor with extreme moulding in hyperextension the chin can escape and be born or perhaps it may rotate posteriorly and increase the difficulty. Without this fundamental knowledge of normal and abnormal labor mechanism, one will obviously be working in the dark. Perhaps one will be able to put on the forceps and may even get them on correctly. If when one exerts traction and the baby's head does not move, however, what will he do? He can persist and by great traction and muscular force drag the baby's head through the pelvis in a diameter through which it could not be born if left to itself and which is entirely foreign to that required for the situation. This policy will result in disaster for the baby and perhaps in terrible injury to the mother.

If one is properly prepared, knows his landmarks, makes a good diagnosis of what is happening and of the type of mechanism with which he has to deal, then his operation is by just so much simplified. One makes an accurate application and knowing much about the mechanism required he with great gentleness and the minimum of force guides the head through the most favorable path, advancing the head to a lower level where rotation may be easier in some cases, pushing it upward and rotating before using traction in others. As there are many variations in the size and shape of the planes of the maternal pelvis at its different levels, and as there are also variations in the type of moulding and engagement of the fetal head, so there will be many variations in the mechanism or method by which the head must adapt itself to the

pelvis. The good operator will recognize this fact and carefully and gently guide the head accordingly. If his previously conceived notions of how he should apply traction or rotation do not seem to work and progress stops, he certainly should not resort to brute force as the way out, but should try another direction. If failure occurs with the occiput anterior, more room is often found in the posterior quadrants or in the transverse and a shift of direction will often greatly simplify the delivery. Where the head is arrested in transverse in poor flexion and the natural forces do not seem sufficient to bring the occiput low enough to escape under the pubic ramus, apply the Elliott forceps in the reverse of the usual position, i.e. instead of the usual occiput in the concavity of the forceps curve have the pelvic curve of the forceps toward the baby's face. Now if axis traction is made the line of pull will be such that flexion is favored, the forceps passing in their widest point of separation over the parietal bosses of the head. The occiput will be pulled down, usually with ease, to the pelvic floor and will then rotate forward and be delivered with forceps upside down or by removal and reapplication of forceps. This manouever has been very useful in treatment of the transverse arrest.

As an aid in diagnosis of size and shape of the pelvis the stereoscopic X-ray can be of great value and is so proving to those who are properly familiar with it. The decision to perform Caesarian section on X-ray findings alone is, however, bad, for the X-ray picture gives us no idea of the adaptability of the particular fetal head to the particular pelvis. We still have babies delivered normally through pelvis which look very treacherous before a proper trial of labor proves them not to be. Unless the indication is absolute, therefore, a trial is in order. To conduct this trial we come back to first principles, a knowledge of how the head engages and how it finds its way through the difficult pelvis. Only by constant and careful observation hour by hour, with experience of many examinations during labor, is this knowledge obtained, but once one opens his mind and gives time and thought to it there is no more fascinating or worth while study in medicine or surgery.

To my way of thinking the conduct of labor, and particularly borderline or difficult labor, must always remain an art. Surely it is unreasonable to think that any mechanical formula can tell us the way to manouever a baby's head through and out of a mother's pelvis with least possible injury to either.

MANUAL REMOVAL OF THE PLACENTA
A TWELVE-YEAR STUDY
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It has been repeatedly stated that removal of the placenta manually is an extremely dangerous procedure. A number of reports testify to the high morbidity and mortality, and especially the high sepsis rates. The most extensive series was published in 1927 by Heidler and Steinhardt from Kernauner's Clinic at Würzburg. In 1000 cases of manual removal they found a gross mortality rate of 8.02 per cent. After making every possible deduction, they found that one woman out of every fifty died as a direct result of the operation. Other reports give mortality figures ranging from 2 to 28 per cent. In 1912 Alletsee stated that 81 per cent of his cases were in multiparae, and that in 10 per cent there was a history of previous manual removal. In Goethal's series of 170 cases, published in 1923, he found the high incidence of one in forty-eight hospital deliveries. In most reports the incidence is lower, down to one in 312 reported by Hirst in 1918.

A gross morbidity rate of 54.95 per cent was found by Peckham reporting on 186 cases from the Johns Hopkins Hospital in 1935. He, for the first time, compared the cases of manual removal to a general clinic population, noting the effects of certain predisposing factors.

According to Williams, in most cases the term "adherent placenta" is a misnomer, except in a few instances in fibroid uteri or cornual implantations. He states that the interference with expulsion is usually due to abnormalities in uterine contractions rather than to abnormal adhesions between the placenta and the uterine wall.

Adair has recently discussed at length some of the factors influencing placental separation and interfering with expulsion. He noted that prematurity, primary or secondary inertia, rapid or operative deliveries, prolonged labors, and overdistension of the uterus may delay separation. Uterine tumors, toxic or infectious states may cause disorders.

From the Providence Lying-In Hospital.

Read before the one hundred and twenty-ninth Annual Meeting of the Rhode Island Medical Society, Obstetrical Session, Providence Lying-In Hospital, June 5, 1940.

The author is indebted to Dr. Bertram H. Buxton, Chief of Staff, for permission to use the hospital records.

Abnormal adherence may be due to endometritis, nephritis, abnormal placental site or unknown factors. Uterine atony or spasm may interfere with expulsion.

In this paper I have attempted a study of some of the foregoing topics and of some others that appear to play a part in this problem.

Incidence

During the past twelve years at the Providence Lying-In Hospital, from May 1, 1928, to April 30, 1940, there have been 158 cases of manual removal of the placenta. Of these, 154 were delivered in the hospital, four were admitted for the operation following delivery in the patient's home by a private physician. In this same period, there were 31,831 deliveries of viable infants in the hospital, an incidence of manual removal in hospital cases of 0.48 per cent or one in 208. No case has been included that had not reached the seventh month of pregnancy.

It is to be noted that while the incidence of operative deliveries for the hospital generally averages 18 per cent, in the cases of manual removal it was 38 per cent.

Suggestive Predisposing Factors

A study of the obstetrical history of these patients throws some light on the type of case in which an abnormal placental mechanism is likely to occur. In 51.8 per cent there was a history of obstetrical pathology, local or constitutional, in the immediate or preceding pregnancies. For example, in 26 per cent it was stated that there had been one or more abortions, spontaneous or induced, which is just twice the incidence found in a control group. A manual removal had been performed in seven previous term labors (4.43%), an incidence nine times that for this hospital.

In 30.8 per cent the immediate pregnancy was abnormal. There were nineteen premature labors (12.0%), an incidence about three times that we usually encounter. The frequency of antepartum fetal deaths (7.0%) was about seven and one-half times the usual incidence. The occurrence of all types of toxemias averages 3.6 per cent in this hospital, while in this series it was 16.5 per cent, four and one-half times greater. There were six cases of placenta previa of all types, and two of premature placental separation. Syphilis did not occur with greater than usual frequency.

During labor there often come into play factors which lead to exhaustion and hence to abnormal uterine action in the third stage. In 34.8 per cent one or more of these factors appeared to play some part. In seventeen the labor was definitely prolonged, that is, over thirty hours. Maternal exhaustion was an indication for operative delivery in eleven instances. In twenty-four a long and difficult obstetric operation with its long anaesthesia was necessary to effect delivery. Primary or secondary uterine inertia was noted in six cases. It is in just such atonic, exhausted uteri that inefficient placental separation and expulsion are liable to occur.

Indications

The indications for manual removal of the placenta, as stated in the records, fall under three heads: hemorrhage most often (61.4%), retention second (35.7%), and the condition of the patient or uterus last (2.9%). The figure for retention is high, compared to other series where it is as low as 2 per cent. In this hospital it has been customary to wait for one hour before contemplating manual removal, whereas many others wait a longer period. Furthermore, in most of these cases of retention several additional valid reasons were stated, so that retention alone as an indication was found in only 7 per cent. It is obvious that the morbidity will be lower where manual removal is performed for simple retention than when done to terminate a complicated situation or control hemorrhage.

Clinical Findings

In several cases the exact blood loss after delivery could not be determined, but in 45 per cent there was postpartum hemorrhage of 500 cubic centimeters or more. This is about thirty-five times the hospital average, which is only 1.3 per cent.

In thirty-eight cases (24.0%) the uterus showed a greater or lesser degree of atony, not usually improved by pituitrin, and accompanied by a high incidence of hemorrhage.

The duration of the third stage varied considerably, in one case lasting forty-eight hours before admission. However, in only 13.9 per cent of the total number was it more than two hours from delivery to manual removal.

In only three cases was the placenta found to be densely adherent, requiring careful but forceful dissection to separate it from the uterine wall. But in ninety-three (58.9%) it was stated to be partially

adherent or not completely separated, yet came away with very little effort. It seems likely, as suggested by Williams, that these were not truly adherent, but merely had failed to separate completely because of uterine dysfunction or inadequate time. A study of these cases bore out this contention.

In twenty instances the placenta was found completely separated but retained or incarcerated. In one-half of these there was a tight ring of spastic uterine muscle located usually at the junction of upper and lower uterine segments, or at some point higher in the corpus. In twenty-nine other cases there were encountered contraction rings which doubtless played a rôle in hindering separation. There is suggestive evidence that the use of pituitrin at the end of the second stage may result in the formation of contraction rings. In this series, all of those that followed its use have occurred in the last three years during which pituitrin has been used almost routinely. Most authorities state, however, that there is no increased incidence of placental incarcerations as a result of its use after the second stage.

In only twenty cases was Credé attempted, but without success. In a few it was tried repeatedly. The danger of Credé expression, too early and too frequently employed, with its resulting atony and partial separation, was illustrated in a number of these cases.

Morbidity

The gross puerperal morbidity rate was 32.3 per cent, over six times the hospital average of 5.0 per cent. When manual removal was the only operation, almost one-third of the patients (29.6%) developed a puerperal infection, illustrating the increased hazard to which this procedure subjects them.

Of the forty-nine puerperal infections, one-third were severe, including one case of sepsis with death, four with thrombophlebitis, two pulmonary infarctions, and three with pelvic peritonitis or cellulitis.

The morbidity was much higher in those cases where packing of the uterus was employed following manual removal. More than half of the patients (52.2%) developed puerperal infections. It was noted that in ten of the cases the packing was not employed on its own indications, but as a routine procedure following manual removal, although the bleeding was moderate in amount.

The importance of a thorough and complete removal of the placenta is well illustrated by twelve cases in whom a fragment of moderate size was accidentally left behind. The morbidity in this group reached the very high figure of 83.3 per cent and most of the infections were severe and prolonged. A secondary curettage to control delayed hemorrhage during the puerperium was necessary in three patients.

Mortality

In the entire series of 158 cases of manual removal of the placenta there were two maternal deaths, giving a gross mortality rate of 1.27 per cent. A brief résumé of these two cases follows:

No. 10490. A normal twenty-two year old primipara, at term, became exhausted after only nine hours of labor. A one and a half hour second stage was terminated by a difficult manual rotation and mid-forceps delivery. She took the anaesthesia poorly with persistent marked cyanosis. The ensuing shock was treated with fluids and morphine. Manual removal of the placenta was easily performed after Credé failed. The blood loss was slight. She developed pulmonary edema which became progressively worse and she died six and a quarter hours after delivery. A post mortem examination revealed nothing but the edema of the lungs. This death is clearly not due to the manual removal.

No. 13645. A twenty-six year old multipara, eight months pregnant, was admitted with moderate painless bleeding. Spontaneous rupture of the membranes was followed by intrapartum infection with temperature elevation to 102.4°. Medical induction was followed by dragging labor, with loss of fetal heart and development of uterine inertia. Decapitation and extraction were necessary because of an impacted shoulder presentation and tight constriction ring that failed to relax. An immediate manual removal of the placenta was done because of profuse hemorrhage from an atonic uterus which was packed. A severe sepsis developed at once and persisted to death on the fiftieth day postpartum. Blood cultures were positive for streptococcus viridans. There was no post mortem examination. This death was indirectly due to manual removal of the placenta.

The corrected mortality rate, not including the first case, is 0.63 per cent.

Discussion

As we have seen, a number of preventable and non-preventable factors may adversely influence

uterine function after delivery, yet the proper conduct of the third stage remains our best safeguard against complications. Haste and poor judgment too often lead to interference with the placental mechanism, producing partial separation and hemorrhage, necessitating manual removal for its control.

Hemorrhage is the most frequent indication for removal, and in special situations, such as placenta previa or premature separation, where the control of bleeding is urgent, should not be too long delayed. We have noted that retention alone is not a frequent indication for manual removal and that true adherence is the exception rather than the rule. Common practice has established at least two hours as the minimum waiting period before manual removal providing the patient is in good condition and bleeding is not more than 500 cubic centimeters. During this period the uterus should be controlled, but massage or other manipulations are to be avoided unless to control bleeding or combat relaxation. Simple expression should not be employed until the signs of separation are plainly evident and only when the uterus is firmly contracted. If this fails and it is necessary to evacuate the uterus, Credé may be attempted but not oftener than every fifteen minutes, realizing that it may do more harm than good. Not infrequently, deep anesthesia, adrenalin, or catheterization of a distended bladder will obviate the necessity for invading the uterus. After all conservative measures have failed manual removal may be resorted to, maintaining scrupulous asepsis.

A procedure that subjects the patient to the hazards we have noted is not to be too readily undertaken. Only when the indications are urgent and clear-cut should it be employed. That the placenta should be inspected for complete removal is evident from the increased morbidity and danger of delayed hemorrhage associated with retained fragments. Packing should not be employed routinely but performed only when the indications for its use are separate and distinct.

Conclusions

1. The incidence of manual removal of the placenta at the Providence Lying-In Hospital during the past twelve years was one in 208 cases.
2. Certain obstetrical complications in pregnancy seem to predispose to third stage difficulty.
3. Patients with long exhausting labors or difficult operative deliveries often require manual removal of the placenta.

4. The indications for manual removal were hemorrhage, retention, and the patient's condition, with hemorrhage most common.

5. The gross morbidity rate was 32.3 per cent, over six times the hospital average. Failure to completely remove the placenta and packing increased the morbidity rate to 83.3 per cent and 52.2 per cent respectively.

6. The gross maternal death rate was 1.27 per cent and the corrected rate 0.63 per cent.

7. A policy of non-interference except where clearly indicated will reduce the necessity for manual removal.

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METASTASES OF THE SCALP SIMULATING TURBAN TUMORS

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Arch. of Derm. a. Syphil. 41:639 (April) 1940.

Ronchese reports a case of unusually extensive metastases to the scalp from a carcinoma of the prostate. The case is interesting because of the rarity of metastases to the scalp and because of the extreme rarity of the occurrence of a very large number of tumors grouped in one area of the body while practically none were located on the rest of the cutaneous surface.

The case is also interesting because of the striking similarity to turban tumors, both clinically and histologically. To this regard, Ronchese recalls a previous study of the subject (Multiple Benign Epithelioma of the Scalp-Turban Tumors — A. J. Cancer, 1933). To the thirty-one cases gathered in 1933, thirteen more are added. The pathology of this strange and little known condition of the scalp is again discussed.

TRAGEDIES AND CALAMITIES OF SURGERY

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In 1868, Sir James Paget delivered before a classroom of students at St. Bartholomew's Hospital in London, a lecture on the "Calamities of Surgery." This lecture was published in 1875 by D. Appleton and Company, New York, along with other lectures and essays, in a book entitled "Clinical Lectures and Essays." The following are some extracts from this lecture:—

"Two cases have occurred during the last week which lead me to speak to you about what may be called the calamities of surgery, a subject of great interest which you had better begin to study in early life, for the study of it, if deferred to later life, only leads to reflections which are useless and distressing.

"Last Friday a patient died under the influence of chloroform. It was given with all customary care and there is nothing in all the circumstances to which we can refer that would imply that any thing was left undone that ought to have been done. In the morning I had advised the chloroform for this patient whose hand had to be put straight in order to avert the deformity that was being occasioned by disease of the wrist joint. In the afternoon my house surgeon and a dresser were giving it, the pulse suddenly failed and the patient sank and died. The friends would not allow a post-mortem examination so the case affords us no useful information. But the fact that I want you to keep in mind is that notwithstanding all care and all good intention, surgery shortened to a few minutes this woman's life that might have lasted many years. At the very worst she would have gone about for the remainder of her life with a crippled hand, but she might have lived to a good old age. She died and died without any warning of her danger.

"This is one of the calamities of surgery. It is one of the many cases that lead one to wish that something might be discovered or invented which would combine what I believe was the greater safety of sulphuric ether, the first and original anesthetic, with what is the far greater convenience and facility of administration of chloroform. But till that substance is discovered we shall have to proceed in

Read before a meeting of the 34 Medical Club, May 25, 1940.

surgery with uncertainty; or rather with certainty that occasionally we cannot tell when some one whose life we are trying to prolong or ease will die and die by means that we use to save him from pain.

"The other case was that of a man on whom I operated for removal of the head of the humerus. He came, you will remember, with his right arm almost completely useless and often very painful because of an unreduced dislocation at the shoulder. The dislocation had been unreduced for, I think, eighteen months and there was no hope of replacing the bone by any ordinary means. The man himself was urgent that the arm should be made in some measure more useful and less painful than he now found it, and accordingly we decided on what seemed to be the only thing for his relief, excision of the head of the humerus, which by pressure on the brachial plexus appeared to cause the pain. I did that operation and a few days after it, pyemia set in and in a few weeks the man died. There were many circumstances in this case to diminish the rebuke that one was bound to inflict upon one's self. The man was exceedingly urgent for the operation, out of sheer wilfulness and obstinacy he refused for a time all careful nursing and absolutely refused his food and so diminished greatly his chance of recovery. Nevertheless, the fact remains that but for the operation this man might have lived for many years, he would have lived with an only partially useful right arm, but he would have lived and been able to work and would have done some good for himself and others, but because of the operation instead of living many years he died in three weeks.

"Cases such as these ought to be very honestly considered by us all; for I venture to say that there is no surgeon in large practice, no surgeon to a large hospital who has not once or more in the course of his life shortened patients' lives when he was making attempts either to prolong them or to make them happier. And this, you will observe, is not merely the case with capital operations. When a patient submits to a large operation it is always for the remedy of something that will render his life either very miserable or very short and to escape so great distress, it is quite fair that a man should run great risk of his life. But these calamities occur however rarely in comparatively trivial cases; when the operation is not done for any consideration of prolonging life but, it may be, of making life somewhat happier or somewhat more useful as in the amputation of a finger, the tapping of an ovarian cyst, the

tapping of a hydrocele, the division of a cervix uteri, the ligature of a pile, the division of a fistula, the removal of a small tumor from the face or scalp. I have known deaths from all of these and if you were to go over the whole list of so-called minor operations, you would find that every surgeon of much experience has either had in his own practice or known in that of others, one or more cases of each that have proved fatal. If any man will remove with the knife, in a hundred instances, cysts from the scalp, I will venture to say that he will have one or two deaths. If any man will take in succession an equal number of cases of ligature of hemorrhoids, the probability is that he will have one or two deaths. It is not necessary however that I should recount all these operations to estimate the average mortality of each, that which is most important for you to understand is that, without very great care, you will certainly lose patients after minor operations and be severely blamed for the loss.

"Moreover, these deaths, though they are the worst are not the only calamities that ought to be reckoned as calamities of surgery. We ought to add to the list all those cases in which operations for comparatively slight diseases are followed by very serious illness or by permanent damage greater than the disease as when the removal of a finger leads to cellular inflammation of the hand and permanent stiffness of some part of it or when after circumcision sloughing ensues or after the removal of a scalp cyst dangerous erysipelas.

"The consideration that you are liable to these calamities should be an incentive to the most earnest and continual study of your profession, that you may avert all avoidable ignorance; and to constant discipline in watchfulness that you may overlook nothing that can contribute to a patient's welfare.

"And you should study carefully all of what are called the minor parts of your profession. Minor they may be with regard to each instance in which they have to be practised; but they become major if you multiply those instances together. I refer chiefly to the necessity of cultivation skill in dressing wounds, in the completion of operations, in the looking to all the seemingly little things that, after an operation, minister not only to a patient's comfort, but to his welfare. Among the cases that I have to regret is one in which a patient of mine died from a piece of plaster being put on in the wrong direction. A young man had a tumor removed from

deep in the back of his thigh; and at the end of the operation I know not whether by myself or some one else, a broad strip of plaster was put around the thigh, completely encircling it and over that, for some further means of security, a bandage. Next day the limb was swollen, but apparently not much more than it might have been swollen from ordinary inflammation following an operation. But, the day after, the limb was swollen much more; and the day after that there was acute inflammation of all the cellular tissue about the wound; and then came hemorrhage; and then the man sank and died. The sole cause of his death was the strip of plaster which was put round his limb and not removed for two days. From that time to this, I think no one has ever seen me put a strip of plaster around a limb, unless spirally. Small as such a thing may seem in the art of dressing, it cost the man his life. I tell the case that I may in some degree atone for the fault by hindering you from incurring the same risk. Attend then carefully to what are called the minor things of surgery; not merely to skill in operations, large or small; learn the habit of entering completely and fully into everything that may minister to the safety and comfort of the patient."

It is interesting to continue with the following foot-note to the above lecture. "For the last two years I have used only sulphuric ether or, for short operations, nitrous oxide gas or ether spray. The inconveniences of the ether are remedied by Mr. Clover's method of making the patients insensible with nitrous oxide and then giving the ether. The risk and calamities of operations have been reduced even during the few years since the foregoing lectures were given, but they still are too many and too great and I venture to hope that the lectures may help in still further reducing them."

Sir James Paget was a brilliant surgeon, a man of keen foresight, and an inspiration to all who were fortunate enough to be associated with him. His lecture on the "Calamities of Surgery" is a masterpiece. Seventy-two years have elapsed since the lecture was delivered. The surgeon of today has at his disposal laboratories which perform for him numerous and varied tests on the urine and blood. He has the electro-cardiogram and X-ray to further help him in determining the fitness of a patient for operation. The blood pressure machine and thermometer play their part also.

Our patients are prepared for operation with various drugs for sedation which are given pre-

operatively. They are given blood, glucose and saline intravenously if they are anemic or their fluids depleted. We attempt to combat shock with all methods available to us. If shock occurs in spite of our most rigid preparations we give more blood and solutions intravenously. We have many drugs which also are used. We have such varied armamentaria as Levine tubes, Miller-Abbott tubes and others to combat dilatation of the stomach and paralytic ileus, bronchoscopes to remove plugs of mucus from bronchi, sulfanilamide to arrest streptococcus infections, sulfapyridine to arrest pneumococcus infections, insulin to combat diabetes mellitus, serums to abate tetanus and gas gangrene. All the above mentioned methods, instruments, procedures and drugs help us to aid more of the patients who come to surgery. In spite of all this we still have our tragedies and calamities. I will endeavor to detail those that have come to my attention in my nine years practice of surgery.

Anaphylactic Shock

A boy ten years old had a gunshot wound. He was given tetanus antitoxin. The wound was cleaned and dressed by his family physician. About ten days later he was seen with a severe infection of the hand with cellulitis extending up to his shoulder. The story of gunshot wound was elicited but no story was obtained of his having received tetanus antitoxin. He was given a second dose of tetanus antitoxin without the preliminary test for his sensitivity to horse serum. The youngster died of anaphylactic shock before aid could reach him.

A laborer sustained a bruise of his foot from falling cobblestones. His wound was dressed by his family doctor. Approximately a week later he was admitted to the Rhode Island Hospital Out-Patient Department with a black gangrenous foot, generalized rigidity and fixed jaws. He was admitted to the main hospital and given extensive tetanus treatment but died in five days. A man working in a road gang should have received prophylactic tetanus antitoxin.

A man forty-five years old apparently in excellent health had a simple cholecystectomy done. His condition was good following the operation but as it was thought he was not taking sufficient fluids he was given an intravenous saline infusion. This was followed by extreme chills, shock and death in two hours. An autopsy was not performed. Investigation proved that he died from impurities in the solution.

Anesthetic Accidents

A somewhat feeble, emaciated male of sixty had a small cancer of the lower lip. It was decided to excise the growth under evipal anesthesia. A minimum dose was given intravenously, administered slowly. Before two-thirds of the dose was administered the patient became unconscious, cyanotic, pulseless and in spite of all the stimulating drugs we administered, his respiration ceased. This operation could have been done under local novocaine block.

A woman forty-six years old, in apparent good health, came to me for operation for hemorrhoids. She was given nitrous-oxide-ether anesthesia. When I commenced to dilate the sphincter in preparation for the hemorrhoidectomy I was told by the anesthetist that the patient was pulseless and that respiration had ceased. She could not be revived. A post-mortem examination was performed. The cause of death was given as pulmonary collapse.

A man with an extensive epithelioma of the hand was prepared for excision of the cancer and for skin graft. It was decided that ether was the anesthetic of choice in this case. Delayed by a long stomach operation we did not get to his case until about 12:30 P. M. The patient was given nitrous oxide followed by ether. During the ether induction he commenced to vomit. He inhaled his dinner and drowned in his food. Investigation proved that he had been given an ether breakfast which consisted of no breakfast. Since dinner time had arrived and there was no order for withholding dinner, he was given his dinner. Having been without breakfast he must have been hungry and ate a most hearty meal. Between the time when he had partaken of his food and the time he was called to the operating floor, the nurse who had given him his dinner had departed for the nurses' dining room for her own dinner and no warning was sent to the operating room. A case of pure carelessness.

A young woman forty-five years old, with an acute upper respiratory infection, was suffering with acute cholecystitis. An operation was deemed urgent. Because of her reddened throat, running nose and slight cough it was decided that spinal anesthesia was the choice in this case. She was given 150 mg. of pontocaine spinally. She weathered the operation beautifully but the day following operation, developed paralysis of her legs. The paralysis ascended to involve the respiratory center. She was in a Drinker respiratory for five weeks and then expired. No autopsy was obtained in this case.

She died, without doubt, from sequelae of spinal anesthesia.

An elderly man suffering from empyema was booked for a thoracotomy under local anesthesia. Enroute to the operating floor he became cyanotic and died before help could get to him. We were fortunate in obtaining a post-mortem in this case. In the morgue it was found that his upper set of false teeth was jammed tight in his posterior pharynx causing complete obstruction. Because he was to have a local anesthetic his false teeth were not removed on the ward. The exertion of getting on the truck which was to carry him to the operating room caused his plate to become dislodged.

Operative Accidents

A tiny Jewish woman seventy-two years old had all the signs of intestinal obstruction. Her abdomen was immense. The diagnosis of ovarian tumor was made. An emergency oophorectomy was done in great haste because the patient was extremely weak. A tremendous tumor weighing some fifty-four pounds was removed. The patient never awakened from her ether anesthesia, remaining unconscious for about seventy-two hours until her death. She excreted no urine from the time of her operation. Cystoscopy was done and an attempt made to catheterize her ureters. The catheters entered the ureters on either side but met with obstruction and did not go very far into the ureters. No urine was found in her bladder. Another operation was deemed inadvisable. While no post-mortem was obtained in this case I feel that her ureters were tied off in the haste of the operation.

Speaking of haste making waste brings to mind two cases in which I was giving ether. One case was that of a young man of thirty who had a gangrenous appendix removed at operation. The operator accidentally cut into small bowel on entering the peritoneum. Because the appendix was in bad condition the incised gut was closed over with only a single layer of fine silk and the appendix was immediately removed. The wound was just as hastily closed up tight. He died of general peritonitis in eight days. At autopsy the perforated small gut was found wide open pouring out its intestinal contents. The other case was that of a woman about forty-five years old who was said to have an inguinal hernia. The surgeon had difficulty in finding the hernial sac but finally decided that a piece of tissue he grasped in his forceps must be the sac. Incision was rewarded by exodus of large quantities of

feces. He had cut into the sigmoid. The sigmoid was rapidly closed with three layers of sutures but the *b. coli* had in the interim spread far and wide. The patient expired. No post-mortem was obtained in this case. My guess would be that this was a death due to peritonitis.

From the time of my first operation I have been cautioned by my teachers to be careful about incising the urinary bladder. In turn, I have since cautioned my pupils of the same danger. One of my internes rebuked me by saying that this never could happen. The very next day he was doing an inguinal hernia. He was very much surprised when urine spurted after he had made an incision into what he thought was the hernial sac. He reddened and was chagrined by this avoidable accident.

Coronary Thrombosis

When we are considering tragedies of surgery in this day and age we must not overlook coronary thrombosis following operation. I have seen three such cases. The first was a man in his sixties who was known to have had attacks of angina pectoris over a number of years. He had attacks of cholecystitis associated with jaundice. He survived three attacks without operation. The final attack was severe. He had exquisite pain, jaundice and fever. Cholecystectomy was performed. His condition was good until forty-eight hours after operation when he was seized with severe vise-like pain across his chest and died promptly. The second was a man fifty-seven years old with a peri-nephritic abscess which was incised and drained. He died beautifully for three days, then died with what looked like a typical coronary attack. The third was a man of fifty-six who had a perforating gastric ulcer, with severe nocturnal pain. The operation was deemed necessary. He was a number two risk. He had no attacks of angina that we knew of. He died on the third day post-operatively of what certainly looked like a typical coronary thrombosis.

Hemorrhage

Post-operative hemorrhage is another tragedy which we must consider. In the days of Paget, post-operative hemorrhage was primarily due to sepsis. Post-operative hemorrhage today is due to carelessness or accident. I have seen six such cases.

The first case occurred following an operation for removal of the uterus and the appendix. Two hours after operation the patient's condition was reported as being poor. From this time until four-

teen hours after operation she had three intravenous infusions of glucose and saline without any apparent benefit. A transfusion was next done. This rallied her a bit, then it was decided that the condition was only shock. She was given morphia and proceeded to have a good night's sleep. The following day her blood pressure was still zero, her pulse rapid, she had air hunger, and finally died. Post-mortem showed a ligature slipped from one of the ovarian arteries.

In another case the ligature slipped away from the renal artery after removal of a kidney. The third case occurred in a man seventy-two years old following a transurethral prostatectomy. A vessel somewhat out of view of the cystoscope was cut. Blood clouded the view so that the bleeding vessel could not be fulgurated. Suprapubic cystotomy was out of the question. Bleeding was controlled by a special catheter which has a rubber balloon on the end of it. This was inserted into the bladder and filled with saline. Three blood transfusions about two hours apart saved this man's life.

Another case was that of a girl in her twenties who had bleeding following a presacral resection. Operation with control of the hemorrhage saved her life.

The fifth case was that of a woman in her early forties who had bleeding following hysterectomy. Her condition was grave when she reached her room. She was immediately returned to the operating room. A ligature on one of the uterine arteries was not properly placed. The artery was picked up and the bleeding controlled by a new ligature. She survived.

The last case was bleeding following a hysterectomy. The patient was a young woman in her forties. Her condition was poor when she returned from the operating room. An intravenous infusion brought her blood pressure up somewhat and she seemed a little better for two hours. Then she went down into shock and in spite of two more intravenous infusions and one blood transfusion her pulse remained absent and she was without blood pressure. Her abdomen was rigid with shifting dullness, with severe pain and marked tenderness. She was opened up and it was found that she was bleeding from one of her ovarian arteries. The artery was properly ligated but was still bleeding. Apparently what happened here was that the ovarian artery was punctured in transfixing and closing over the vagina. She had a second transfusion during

the operation. She made an uneventful recovery. The first of these patients perhaps might have been saved if she had been immediately explored.

Embolism

The saddest of all tragedies are those caused by septic emboli. I have had two such cases; one in a man sixty-five years old eight days after an inguinal hernia, the other in a woman seventy-two years old on the sixteenth post-operative day following an operation for a large incisional hernia.

One day I was summoned to see a patient who had a cholecystectomy performed fourteen days previously. It was the day he was to be discharged from the hospital. He was having severe chest pain with difficulty in breathing. His skin was cyanotic, cold and clammy. I got to his room in time to help put him back into bed and watch him die.

I was called from the operating floor one afternoon to see a colored boy who had an appendectomy eight days previously. He was sitting on a bed pan when he was seized with chest pain and difficulty in breathing. I saw him die quickly. These cases all had a premonition of death as each one of them said he was dying. The cause of death in these cases was pulmonary embolism. I have seen two patients die of cerebral embolism. Each was following a one stage combined abdomino-perineal resection of the rectum for carcinoma. To date we have no way of combating this tragedy and no way of foretelling it. For embolism occurs in the excellent risks as well as in the poor risk cases.

Serious Results

Several years ago I saw a woman about sixty years old who was treated in the accident ward and reported to the fracture follow-up clinic for after-care. She complained of pain in her fractured arm far beyond that which is ordinarily experienced in a fractured wrist. Her fingers were eschimic and swollen. Her wrist was flexed and her fingers were contracted. She also had a large blister on the anterior surface of her forearm near the elbow. The bandage had been entirely too tight. This was a case of Volkmann's Contracture. After many weeks of unnecessary suffering she recovered from this avoidable complication with a fairly useful hand. A large slough developed in the location of the blister.

A physician was called to see a boy six years old who had fallen and lacerated his scalp. He cleaned the wound and approximated the skin edges with

several sutures. The wound became red, swollen and painful in forty-eight hours. The youngster had several chills and severe fever. He developed a marked cellulitis of the scalp. He was given ether; the sutures were removed and the wound was laid wide open. The wound was found to contain dirt and gravel. Streptococcus was cultured from the wound. It was in the days before sulfanilamide and the youngster had a narrow escape from death. The child endured two months of dressings because of improper surgical care. If the wound had been cleaned properly and a debridement done, all of the pain and unnecessary suffering could have been avoided.

A girl nine years old slipped while climbing over a fence, sustaining a laceration and puncture wound of her thigh. The wound was cleaned and a small splinter removed. The size of the splinter was not ascertained. The wound was unhealed after six months of diligent dressings. Finally at the mother's request a surgeon was called in on the case. X-ray disclosed a piece of wood three inches long, one-half inch in diameter, in the child's thigh. Under nitrous oxide anesthesia the piece of wood was removed. The wound healed promptly.

As Paget stated, the many small things in surgery should be dealt with conscientiously and treated meticulously. In applying a dressing with a drainage tube see that the tube is fastened securely to the skin with sutures, as well as to the outside dressing. A case in point is that of a woman who had three common duct stones removed. A T tube was sutured in the common duct for drainage. When a visit was made directly after operation the tube was found in the bed. The patient suffered a great deal needlessly because of someone's carelessness.

Following a stomach resection, a Levine tube was placed in the stomach. Orders were given to connect the tube on constant drainage with suction. Two hours later the patient was in poor condition with abdominal distension and vomiting. The outlet tube had been clamped by mistake and the fluid from the bottle was going into the patient's stomach. Why the suture line did not break I do not understand. The patient straightened out after the error was corrected. Another thing to look carefully for is proper connection to the bottles. In several instances when the responsibility of connecting a tube to a bottle for constant drainage was left to a nurse, I found that instead of a connecting

tube of good size, a medicine dropper was used. It does not take much for the medicine dropper to become plugged. This results in a backing up which defeats the purpose of the tube.

The calamities which I will next relate are the ones that prompted me to write this paper; two cases of unilateral wrist drop following operations for inguinal hernia. In each case the wrist drop was on the left side. The patients were idle for many weeks because of this needless complication. Fortunately they both recovered the full use of the affected hand. I have been speculating as to the cause of this calamity. The elbow perhaps was leaned on during the operation. This may occur if the arm of the patient is not placed properly on the table, so that the elbow is partly off the table. It might have been caused by the rigid band that is used to fasten the diaphragm of the blood-pressure stethoscope to the patient's arm. I have since been very particular about avoiding any pressure on the elbow and shoulder during an operation, and am also fussy about making sure the patient's arms are properly placed upon the table. A foot drop following a simple cholecystectomy is a calamity, especially when the patient is co-operative and a good friend. This occurred in one of my patients about one year ago. He had to wear a brace for about three months and it was six months before he recovered. In some way his superficial peroneal nerve was injured. The leg strap may have been applied too tightly, so that it pressed on the nerve or the bed clothes may have been tucked down too tightly so as to bring pressure on his foot hyperextending it while he was recovering from ether. In this case as in most of the others, carelessness or neglect in some little detail caused this distressing complication. The orthopedic surgeon who cared for this case told me of another case of foot drop following a cholecystectomy.

To avoid these calamities and tragedies we must scrupulously watch ourselves; for in proportion as our patients are helpless, the more it rests upon our consciences to stand in their place and help them. We must govern ourselves in surgery by such rules that we may be able to escape the regrets of such calamities. Consideration of the liability of these calamities should be an incentive to take careful case histories, make good physical examinations, to overcome all avoidable ignorance, and to practice constant discipline in watchfulness, that one may overlook nothing that can contribute to a patient's welfare.

LOCAL REFRIGERATION AND HIBERNATION IN THE TREATMENT OF CANCER

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It is two months since my tour of the eastern medical centers to observe the methods of local refrigeration and hibernation treatment of cancer. Since that time the initial enthusiasm for this type of therapy has decreased to some extent. The future holds the answer as to whether or not it will be efficacious and worthy of general use. In this presentation I intend only to report my observation of some of the techniques of treatment.

Local refrigeration can be dismissed with some general remarks. The apparatus necessary is very simple and varies with the location and extent of the growth. The ingenuity of the physician is tested with each individual case. There must be a means of circulating cold water of a temperature of 37 to 42 degrees to an applicator placed upon or near the growth. The applicator is preferably made of metal but most cases that were observed had rubber applicators. A brain tumor case had a metal applicator inserted into the cavity left after surgical removal of the growth; a tongue cancer had an applicator formed from an airway taken from the anesthesia department. A prostatic case had a metal applicator made from a hollow sound. Breast cases, facial tumors, abdominal tumors, still had rubber coiling applied over the growths. The circulating unit consists of a tank containing cold water kept so with ice cubes; the water is circulated to the applicator and back to tank by means of a circulating electrical pump.

Hibernation is that method of treatment in which the patient as a whole is subjected to a temperature of 40 to 42 degrees during which his body temperature is maintained at 80 to 85 degrees as ascertained by a rectal thermometer. Three methods of doing this were observed. The first was very simple. The patient was placed in a room the temperature of which was 55 to 65 degrees and his bed was filled with sufficient ice to maintain a rectal temperature of 85 degrees.

Read at a Clinical Pathological Conference at the Memorial Hospital, Pawtucket, R. I., April 10, 1940.

The second was the refrigeration or hibernation blanket. The temperature of the room for adults was 65 degrees; for children 70 to 72 degrees. The blanket, a special manufacture of a company in Ohio, was cooled by a large condenser unit similar to that used for air conditioning a room. The blanket enveloped the patient from head to foot both in front and back with zippers at the side. A rectal temperature could be lowered from normal to below 90 degrees in two hours' time with this unit.

The third method was observed here in New England at Meriden, Conn. There was constructed a cabinet larger but similar to the respiratory cabinet used in artificial respiration, the head of the patient being outside the cabinet. This chamber had a capacity of about three times the volume of the patient. It was cooled off to a temperature of 40-42 degrees by a refrigerating unit similar to that used in home electrical refrigerators. This apparatus is a little slower than the blanket in the time necessary to lower the rectal temperature to below 90 degrees because of the relatively increased amount of air space about the patient. It took from four to eight hours to accomplish the result desired. During this time, however, the patient suffers no discomfort because rectal paraldehyde is administered to comfort the patient. The physician, nurse and other attendants are in a comfortable heated room as you will see from the pictures. The rectal temperature is recorded and watched constantly on a Micromax instrument, manufactured in Philadelphia. The head of the patient is in an advantageous position to watch the respirations, pulse, color and mental reactions. Medication, parenteral fluids and care of the body of the patient is easily attended to by means of glass doors on the sides of the cabinet.

It is interesting to observe that at one hospital, feeding of the patients is considered important while at another the patient receives no fluid or nourishment except for emergency intravenous medication. At Temple University Hospital, the standing orders for all hibernation patients were as follows:

1. Feedings 1½ oz. fluid by gavage every hour.
2. T.P.R. and B.P. every half hour.
3. Cod liver oil oz. ss. daily.
4. Thiamin chloride mgm. X B.I.D.
5. Cevitamic acid mgm. 50 B.I.D.
6. Gastric lavage daily.
7. Sterile mineral oil to nose and eyes daily.

8. NaHCO₃ gr. XV 4 times daily.

9. Maintain rectal temperature at 86-87 degrees.

At Meriden, Conn., on the other hand, no treatment was administered except in emergencies. However, a reason for this is that the duration of the treatment rarely exceeded twenty-four hours.

Laboratory procedures were being done at all clinics but the opinion seemed to be that the least amount of interference with the patient was advisable because of the shocked condition of hibernating subjects. I am not acquainted with absolute facts or conclusions regarding the laboratory observations of these patients, but these are a few which may be altered by findings later:

1. Temperature of patient lowered.
2. Pulse—rapid, weak, and feeble, unable to ascertain at times.
3. Respirations normal and slower.
4. Blood pressure—decreased—unable to ascertain at times.
5. Heart—normal, forceful, in fact unchanged.
6. Brain—decreased mentality; patient in a cooperative but semiconscious state, memory clouded and lost.
7. Bladder and rectal sphincters control diminished or absent.
8. Blood count—early increase in red blood cells, anemia develops following treatment. W.B.C. lowered although increases have been noted.
9. Blood chemistry changes—not significant.
10. B.M.R.—my information on this is that the B.M.R. is normal or slightly increased during treatment.
11. Circulation time—decreased.

Finally as to the results of treatment. No definite conclusions are possible at this time. Hibernation treatment is still in the experimental stage; the length of treatment has to be determined. The optimum temperature at which the treatment can be successfully performed; the effects of this treatment on normal tissue after two or more treatments; the lasting effect on the tumor growth itself; are a few of the problems that the large research centers must answer.

In conclusion, I would state that the small hospital is no place to attempt to answer the experimental questions involved; but I do believe that hibernation treatment of extreme hopeless cases for the short period of twenty-four hours for palliative purposes only is possible and could be successfully instituted.



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THE PROBLEM OF THE AGED

Those engaged in the various aspects of public health administration are becoming increasingly aware of the growing problem of the aged person. It is somewhat paradoxical that this problem should have been created in a large measure by public health activities in the field of preventive medicine and that the medical profession in their advances of the past twenty years have contributed in a large measure to the problem. Due to various public health activities and discoveries, both in the field of preventive medicine and therapeutic medicine, there are more and more people in the general population moving into the age brackets about sixty-five years of age. This is true not only in terms of percentage of the population, but also in terms of absolute numbers. To view just one aspect of this situation, that is, cerebral arteriosclerosis and senile dementia, these two conditions have been on the increase for several years all over the country, and the admissions in these conditions in states which provide adequate facilities in their mental hospitals have

been steadily going up. The result has been to create a bulge in mental hospital services which look after this particular group of patients. These two groups are not only occupying a greater percentage of beds every year, but on account of their age require a greater degree of nursing and medical care than those in the younger groups, and, in addition, the degree of service which they can render the Hospital in its various utilities is correspondingly decreased. In the Rhode Island State Hospital for Mental Diseases, almost fifty per cent of the admissions in the last two and one-half months have been above sixty-five years of age and, in most instances, physically infirm as well. It is recognized that there is no solution or cure for this state of affairs, because we do not know anything at the present time about the prevention of cerebral arteriosclerosis and senile dementia. It may be possible, however, to abate the problem somewhat and provide a partial solution if, before signing certificates of mental disorder on persons falling in this group, the local practitioners would thoroughly investigate the possibilities of looking after the patient in the community. In cases where a little financial assistance might make all the difference between being able to keep patients at home and having to send them to the hospital, this also might be arranged for. The assistance of local directors of public welfare might well be enlisted in trying to work out a solution in the community for these patients. This particular aspect of mental hospital care is costing the taxpayers, among whom are the physicians, real money, and in many instances staff has to be diverted to the care of these patients which might more profitably be used elsewhere for younger patients who have an opportunity for recovery.

The above problem is outlined in the hope that the readers of the JOURNAL may be made aware of the situation and their aid enlisted in helping to provide a partial solution.

RHODE ISLAND HOSPITAL

Clinical Pathologic Conference
PETERS HOUSE, TUESDAY, APRIL 9, 1940

Case Presented by Dr. William A. Mahoney

This patient was admitted to the Rhode Island Hospital November 28, 1938. She was sixty years of age, white, a housewife, born in Massachusetts.

Husband, diabetic. Of seven children, two are said to have had tuberculosis in their youth, but all grew to adult life. Twenty years ago, the patient underwent a hysterectomy at the Woonsocket Hospital. The indication for the operation is not given. Menstruation absent since this operation. One year ago she had a yellowish vaginal discharge.

Present Illness

Patient felt well until seven months ago when she had her first attack of pain followed by vomiting. Pain was located about her right costal margin and radiated around to the back. Pain was sharp and intermittent. Vomiting followed shortly after the onset of the pain and for the next five weeks she vomited almost daily. During all this time she was confined to bed. The treatment consisted of sedation, liquids and the avoidance of fatty foods. Recovery was spontaneous after five weeks in bed at home. Between that time and the present illness she had been well until one week before admission when she complained of epigastric pain followed by vomiting. This time the pain did not radiate and required hypodermics to quiet her. At no time was there jaundice, tarry or clay colored stools. Patient felt that she had had indigestion for nearly a year with occasional slight distention. No hematemesis, diarrhoea or melena.

The examination on admission revealed a well developed and well nourished woman, vomiting but in no apparent pain. T. 98.6, pulse 114, respiration 22. B.P. 110/70. The only positive physical findings were an old, healed, firm, low midline scar, a slightly distended abdomen and slight right upper quadrant tenderness. No masses or spasm. The impression was: Chronic Cholecystitis and Cholelithiasis.

Laboratory Findings:

Urine not remarkable on repeated examinations. Wassermann and Hinton negative. Stools were negative for occult blood. Hgb. 110, R.B.C. 5,000,000. Coagulation time 4 min. Bleeding time 3 min. Sed. Rate 1°—22, 2°—35. W.C. 10 to 14,000 with 70 to 75% polys. The Van den Bergh test showed a delayed direct reaction. Glucose 107. CO₂ combining power 62. Urea within normal limits, except in later stages. There is no report at that time. Smear from operation showed no pus nor organisms. Icteric Index 5.8. The culture of the peritoneal fluid was sterile, and the smear showed no pus or organisms.

Ekg.: November 29th—The day after admission, showed some myocardial degeneration, not

abnormal for a woman her age. On December 17th the Ekg. was fairly characteristic of a right bundle branch block. That was the day on which she had a collapse, two weeks after her operation.

X-ray: One chest plate on December 17th showed diffuse increased density in the left base which could be due to consolidation or a very small amount of fluid. There was not much increase in the size of the heart.

Course

Patient remained afebrile for ten days but vomiting and distention persisted. The nurse's notes make no mention of any gross abdominal pain, and enemas repeatedly produced fair gas and fecal results. On Dec. 7th, operation was performed. "The liver was found to be small and high up under the ribs. The gall-bladder could not be seen but was felt and was apparently surrounded by dense adhesions. Small intestine was everywhere very much dilated. Obstruction appeared to be in the lower end of the terminal ileum which could be freed up for about 4" only. Appendix not inflamed. Top of uterus was felt. Omentum was adherent to the entire left lower portion of the peritoneum. Large amount of free fluid. A Wetzel ileostomy was performed with a No. 16 F catheter."

For seven days the patient evidently convalesced satisfactorily. On the 16th a note states that the wound about the tube had broken down and there was a small amount of fecal discharge. No complaints. On Dec. 17th she had a sudden attack of weakness, coma and stertorous breathing. Question of pulmonary embolus. At that time they gave her oxygen, X-ray taken, also Ekg. which showed the right bundle branch block.

From Dec. 17th on, patient vomited whenever the Levine tube was removed. The nurse's notes make no report of gas by rectum or any fecal results from enemas after the time of her collapse, up to which time she was apparently doing well except for a grossly infected wound secondary to the ileostomy.

She died on January 5th.

Discussion

DR. J. MERRILL GIBSON:—Here we have a sixty-year-old woman, sick for several months. We would like to know more about this attack which she had on the outside before coming into the hospital, the vomiting, the intermittent pain in her upper quadrant, especially over the right quadrant. It suggests gall bladder disease. She apparently re-

covered from this attack which would suggest that this possibly was a gall bladder attack. However, with the sharp intermittent pain she might have had some obstruction at that time due to an inflammatory condition which quieted down.

Another thing is the history which speaks of tuberculosis. Which one of the parents gave it to the two children? That we do not know. When she was admitted to the hospital she apparently was in good condition, in no real pain. While they were trying to establish her diagnosis she did not pass any stools except by enemas and just before operation she was quite markedly distended and was operated on for obstruction. At the time of operation they found a large amount of fluid which usually goes with obstruction, or it could be with a tuberculous peritonitis. The culture was negative. You would expect an obstruction which had been going on for a considerable period of time to have some bacterial invasion. The adhesions were very dense and we still have to think of a tuberculous lesion. The gall bladder, at operation, was found to be small and covered over with dense adhesions.

Whether we are dealing with two conditions—one an obstruction low down and the other inflammation of the gall bladder higher up is problematical. From the history later on when we find a fecal drainage from the wound and the vomiting persisting, it makes you think that they did not find the absolute cause of her trouble—that apparently she had some inflammatory condition continuing on. I think it would be almost impossible to make a correct guess as to what she did have. She apparently died of a heart condition. Whether that bundle branch block was due to embolism or thrombosis I don't know.

The serum protein is very low and we have edema. She may have died of just pulmonary edema but the inflammation which was present apparently continued to go on. I should say the first diagnosis would have to be chronic inflammation of the gall bladder. Whether that was due to tuberculosis or not I don't know. Secondarily, obstruction and probably a general peritonitis terminal with terminal broncho pneumonia and heart block.

DR. MAHONEY:—I have asked Dr. Morgan Cutts to discuss the meaning of a right bundle branch block.

DR. MORGAN CUTTS:—I am really no authority on the subject but a right bundle branch block as I understand it is a special kind of configuration with spreading of the q.r.s. and is usually seen in

old failing hearts. It is not necessarily an immediate bad prognostic thing itself. The thing that indicates it may have had more significance in this case is that there were two relatively normal Ekg. examinations before this. When the picture of bundle branch block appears in this sort of case you think there has been a coronary occlusion. Pulmonary embolism also may give a similar electrocardiogram.

DR. MAHONEY:—I was impressed with the fact that two or three times a year we see cases of intestinal obstruction from a gall stone. This five week episode of seven months previously—epigastric pain and vomiting—must have been a pretty severe condition in the R.U.Q. It was more than a simple cholecystitis—it was probably an empyema of the gall bladder to last that long. She had been free from any obstruction for twenty long years after her operation. I wonder if she did not slough a gall stone from the gall bladder and have it get down into her small intestine. The operation apparently did not relieve the obstruction. I wondered if the obstruction was not relieved and if at the end of about ten days she did not develop gangrenous bowel with perforation. Her general balance thrown all off after that might precipitate the attack that occurred, probably a cardiac condition, and she was progressively going down hill all the time.

DR. B. EARL CLARKE:—Do you remember this case Dr. Cooke?

DR. CHARLES O. COOKE:—I cannot remember the case. I think the discussion that Dr. Mahoney has made is logical but I cannot recall the case at all. It seems to me that the case must have been intestinal obstruction. Culture sterile, white count up somewhat. I am afraid if I did the operation it will show me up but I cannot make a diagnosis in this case.

DR. JOHN FERGUSON:—How can you rule out mesenteric thrombosis of the small gut?

DR. MAHONEY:—I don't think you can.

DR. CLARKE:—Was there any acute terminal episode?

DR. MAHONEY:—No, she went into a coma.

Postmortem Findings

DR. B. EARL CLARKE:—I have no specimens on this case. At the time of postmortem there was marked edema of both lower extremities and we thought that the thrombosis we later found in both femoral veins explained this edema.

In the right lower lobe of the lung was an infarct. It is difficult to state the duration but at any

rate this was not a terminal event but was of sufficient age for definite color changes. From the clinical story I assume that the acute episode that Dr. Mahoney described at the time of the change of the electrocardiogram was the time this infarct occurred. Dr. Cutts mentioned that a pulmonary infarct might explain the electrocardiogram. It seems that her exodus was due to pulmonary embolism also, since a large coiled thrombus was found in the pulmonary artery.

The belly was found to be everywhere filled with a thick, foul, fibrinopurulent exudate—so there was a general acute peritonitis. I don't think we can explain the cause of all this with great accuracy but we can speculate on it. There were numerous old adhesions of the peritoneum. Most of these were on the left side. The omentum was adherent on this side. One conspicuous adhesion was rather separate from the rest and on the right side. At a point 19 cm. from the ileo cecal valve the ileum was adherent to the bladder. At the time of postmortem there was no evidence of obstruction at that point. The gut above was not dilated but she had had an ileostomy. The lumen did not seem to be markedly narrowed. There were marked adhesions in the region of the gall bladder and as Dr. Mahoney has predicted there was a large communication between the gall bladder and the duodenum and there was one stone still present in the gall bladder. In the rectum there were two more gall stones, one of which was 3 cm. in diameter, which is a good sized gall stone. I think we can be reasonably certain that the original attack seven months ago was gall stone colic and at that time or later there was a communication formed between the gall bladder and duodenum. At the time of postmortem the stones were beyond the adhesions, but it seems reasonable to assume that, at the time of operation, they were at that point. In the colon she had a number of diverticuli and there were small ulcerations in colon and some of these were perforated so that there was communication with the adhesions and fat and little abscess pockets were scattered in this adherent tissue. We could not exactly demonstrate that the perforations were diverticula but it seems reasonable to assume that they were a result of the diverticulitis.

The interpretation is that she had a diverticulitis with perforation and adhesions. It is, of course, possible that the adhesions causing the obstruction did result from the old operation, we see no way to be certain.

DR. PETER P. CHASE:—Did you say anything about that heart condition?

DR. CLARKE:—It was normal as far as we could tell.

Diagnosis

1. Chronic cholecystitis and cholelithiasis.
2. Perforation of gall bladder into duodenum.
3. Chronic diverticulitis of colon with perforation and peritoneal adhesions.
4. Intestinal obstruction due to gall stone lodging at point where ileum was constricted by adhesions.
5. Terminal peritonitis.

NEWPORT COUNTY MEDICAL SOCIETY

December Meeting

The regular meeting of the Newport County Medical Society was combined with that of the Newport County Dental Society on the evening of Tuesday, December 10, 1940 and held in the Nurses Auditorium at the Newport Hospital. Dr. Philip Geller, Vice-President, presided, in the absence of Dr. Samuel Adelson, President. The minutes of the previous meeting were read and approved and further business was dispensed with.

Mr. Walter Campbell of the Y.M.C.A., spoke for a few minutes relative to physical examinations of boys and young men of the Y.M.C.A. in the drive to improve the physical education of these groups. He requested that two members of our Society be appointed to work as co-ordinators with their committee in this drive.

Dr. Norman MacLeod, General Chairman of the Newport County Medical Society Committee on the Annual Meeting, gave remarks on the Rhode Island State Meeting to be held here next May and asked for the fullest co-operation.

The speaker of the evening, who was then introduced, was Dr. Joseph Doherty of Boston, an Oral Surgeon at the Massachusetts General Hospital. His subject was "The Management of Pathological Lesions of the Jaw." A very thorough and instructive lecture, supplemented by slides, was given, covering all phases of diseases and conditions of the jaw. A general discussion ensued following his talk which was well received. A rising vote of thanks was given the speaker.

Present, were members of the Army and Navy Medical Corps, Miss Gage and Nursing Supervisors. The Dental profession was well represented. Collation was served and the meeting adjourned at 10:35 P. M.

Respectfully submitted,
ALFRED M. TARTAGLINO, M. D.,
Secretary

PROVIDENCE MEDICAL ASSOCIATION

November Meeting

A regular meeting of the Providence Medical Association was held at the Medical Library on Monday, November 4, 1940. The meeting was called to order by President John G. Walsh at 8:40 P. M.

The Secretary read the minutes of the previous meeting which were accepted as read and placed on file.

The Secretary reported for the Executive Committee that the following men had been recommended for election to active membership:

Thomas F. Fogarty, M.D.

James Blessing Moran, M.D.

And for associate membership:

Kieran William Hennessey.

Dr. Jesse Mowry moved for the unanimous election of these applicants to membership in the Association. The motion was seconded and passed.

Dr. Peter P. Chase, Chairman of the Committee on Medical Preparedness, spoke briefly relative to the need for filling out and returning to the American Medical Association the questionnaire forms which have been sent to every doctor. He also spoke of the need for specialists for the Induction Board and asked that any men interested in so serving communicate with Dr. Halsey DeWolf, State Chairman for Medical Preparedness.

Dr. Harry C. Messinger, Chairman of the Committee for the Community Fund campaign reported that the Doctors' Committee had conducted a very successful campaign and he thanked all the members of the Association for the splendid cooperation they extended to the solicitors.

The President announced that the obituary of Dr. Thomas Black as prepared by Dr. George S. Mathews and Dr. Frank E. McEvoy had been placed on file with the Secretary.

The President introduced as the guest speaker of the evening Dr. Joseph V. Meigs of Boston, Mass., Visiting Surgeon of the Massachusetts General Hospital and the Pondville Hospital, who gave a splendid presentation on the subject "Female Endocrinology." The paper was discussed by Dr. George W. Waterman and by Dr. Herman C. Pitts.

The meeting adjourned at 10:20 P. M. Attendance, 130. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D., Secretary.

RECENT BOOKS

OBSTETRICS IN GENERAL PRACTICE, By J. P. Greenhill, B.S., M.D., F.A.C.S., pp. 448, with illustrations, Cloth, \$3.50, The Year Book Publishers, Inc., Chicago, 1940.

This book is another of the single volume surveys on various subjects which have been published by this company. It maintains the high level which the others have established. Dr. Greenhill, the author, is known to us not only as the associate of Dr. De Lee but also as the contributor of many articles to current literature, as author of "Office Gynecology" and for years as the co-author of the "Year Book of Obstetrics and Gynecology."

In the preface the author notes that most obstetrics is done by the general practitioner and implies that the purpose of the volume is to present the information essential to anyone doing obstetrics. "Historical data, controversial discussions, extensive descriptions of anatomy and pathology and conditions which are rarely encountered" are omitted. The volume well fulfills its purpose. The style is clear and concise. The general field of obstetrics is well covered. Sufficient detail and practical suggestion is presented to enable the average physician to properly care for his obstetrical practice. The author does not forget that most of this work is done in the house.

In a volume as short as this (448 pages) the author must be didactic. However, Dr. Greenhill draws on his wide personal experience. His ideas are tempered with a satisfactorily conservative attitude. In discussing more important topics references are made to studies in the current literature to which the reader may turn for further information. Many of these references are in the literature of the current year (1940). The material thruout the book is up to date. The newer concepts of the architecture of the female pelvis and its influence on labor, soft tissue X-ray technic for placenta previa and other recent contributions to the field of obstetrics are considered.

The volume is abundantly illustrated. Many of the illustrations are new and are adequately done. A good index is also provided.

MILTON GOLDBERGER, M.D.

VITAMIN THERAPY IN GENERAL PRACTICE, By Edgar S. Gordon, M.D., M.A., and Elmer L. Sevrinhaus, M.D., F.A.C.P., pp. 252 with 35 illustrations including color plates. Cloth \$2.75, The Year Book Publishers, Inc., 304 South Dearborn Street, Chicago, Illinois.

The striking advances in vitamin therapy tend to be obscured by the vast literature, exhaustive experimental evidence, and exaggerated commercial claims.

The authors of "Vitamin Therapy in General Practice" serve today's physician admirably with an approach that is simple, direct, and practical. Up to the minute vitamin therapy of established value is surprisingly clear, easily mastered, and involves no hazard. This book will give an understanding of vitamin principles, a working philosophy, and a confidence in the proper use of vitamins. Chapters on minerals, proteins, carbohydrates, and fats complete an effective summary of present day knowledge in nutrition.

The busy physician with misgivings on the vitamin situation will find this work authoritative, specific, and most satisfying.

W.M. LESSEL LEET, M.D.